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John A. Sollars JR.

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P.O. Box 1926

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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN A. SOLLARS, JR.

Appeal 2010-001009
Application 10/696,757
Technology Center 3600

Before: JENNIFER D. BAHR, PHILLIP J. KAUFFMAN, and
JAMES P. CALVE, *Administrative Patent Judges*.

KAUFFMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellant seeks review of the Examiner's rejection of claims 10, 13-16, 18, 22, 23, and 37-41 under 35 U.S.C. § 103(a) as being unpatentable over Ando et al. (JP 50-145875; published December 3, 1975).¹

We reverse.

THE INVENTION

Appellant's claimed invention relates to "an inflatable cushion and more particularly to a safety device for use in a motor vehicle." Spec. 1:14-15. Independent claim 10, reproduced below, is representative of the claimed subject matter:

10. An inflatable airbag cushion having multiple fabric layers and closely spaced interconnected woven in joints that resist gas permeation, comprising:

(a) a first woven fabric layer and a second woven fabric layer, said first and second woven fabric layers each having a plurality of yarns running in a first direction, a weft direction, and a plurality of yarns running in a second direction, a warp direction,

(b) a first interconnected joint and a second interconnected joint, said first and second interconnected joints running generally parallel to each other, said first and second interconnected joints each forming a woven union of said first and second woven fabric layers along the length of said interconnected joints, the number of yarns positioned between said first and second interconnected joints being no more than four yarns in said first layer and no more than four yarns in said second layer;

(c) at least some of said weft yarns comprising crossover yarns, crossover yarns of said first layer switching from a position within said first layer to a position within said second layer at said first interconnected

¹ References to Ando are directed to the Official English Translation by McElroy Translation Company, Job No. 360-110666, PTO 2008-7397.

joint, said crossover yarns further switching from a position within said second layer to a position within said first layer at said second interconnected joint; and

(d) wherein said crossover yarns are substantially free of floats at said interconnected joints.

OPINION

Independent claim 10 is directed to an inflatable airbag cushion that includes generally parallel first and second interconnected joints wherein there are no more than four yarns in each of the first and second layers between those joints. Similarly, independent claims 18 and 23 are each directed to an inflatable airbag cushion that includes generally parallel first and second interconnected joints, wherein there are about two to four yarns in each of the first and second layers between those joints.

The Examiner found that Ando discloses an inflatable airbag cushion that includes generally parallel first and second interconnected joints, wherein there are six yarns in each of the first and second layers between those joints. Ans. 3. The Examiner concluded that it would have been an obvious matter of design choice to modify Ando from having six yarns in each of the first and second layers to having between two and four yarns in each of the first and second layers between the first and second interconnected joints because Appellant's Specification gives no stated reason or particular purpose for the number of yarns between the joints and the invention would appear to work with a similar number of yarns disclosed in Ando so long as there are short intervals of the airbag. *Id.* Alternatively, the Examiner concluded that "common sense would dictate that fewer yarns per layer between crossovers would make for more dense fabric and hence retain more gas, and case law has held that changes due to routine

experimentation or optimum ranges are obvious.” Ans. 4-5 (citing *In re Aller*, 220 F.2d 454 (CCPA 1955)).

Appellant argues that the subject matter of independent claims 10, 18, and 23 would not have been obvious in view of Ando. Br. 6-17. In particular, Appellant argues that, as recognized in Appellant’s Specification and substantiated by Appellant’s testing, reducing the number of yarns in the region between interconnected joints improves gas retention in airbag structures and that the prior art does not recognize this connection. Br. 6-9; Spec. 15, ll. 9-17; Sollars Decl., paras. 6-9.

The Examiner’s legal conclusion of obviousness must be based upon a sufficient rationale to support the proposed combination. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006))).

Appellant has submitted evidence which tends to suggest that the number of yarns between the joints is significant to the performance (gas retention) of the fabric. Sollars Decl., paras. 6-9. Because the airbag cushion functions differently based on the number of yarns in the region between interconnected joints, a rationale based upon obvious design choice is precluded. See *In re Gal*, 980 F.2d 717, 719 (Fed. Cir. 1992); Cf. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (evidence showing that a modification is merely a rearrangement of parts with no change in function will support a conclusion of obviousness).

Nor does *Aller* support the Examiner’s conclusion of obviousness. *Contra* Ans. 4-5. *Aller* established two conditions for a conclusion of

obviousness: one, the general conditions of the claim must be disclosed in the prior art and two, discovery of the optimum or workable range must be a matter of routine experimentation for a person of ordinary skill in the art. *Aller*, 220 F.2d at 456. Here, the Examiner inadequately addresses the first condition of *Aller* by failing to establish that it was known in the prior art that there was a link between the number of yarns and the gas permeability of the airbag cushion. Further, because such a link was not recognized, the Examiner also failed to establish how optimization of the number of yarns in each layer between the interconnected joints would have been a matter of routine skill. Before the determination of the optimum or workable ranges of a variable might be characterized as routine experimentation a particular parameter must first be recognized as a result-effective variable, *See In re Antonie*, 559 F.2d 618 (CCPA 1977) (the prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore optimization of this parameter was not recognized in the art to be a result-effective variable).

The Examiner also reasons that the proposed modification would have been a matter of common sense because decreasing the number of yarns in each layer between the interconnected joints would increase the density of the fabric and thus cause the fabric to retain more gas. Ans. 4-5. However, this conclusion is based on a false pretense because the density of each of the first and second layers of fabric is not altered by adjusting the number of yarns in each layer between the interconnected joints.

Accordingly, the Examiner's articulated reasons cannot support the conclusion of obviousness of the subject matter of independent claims 10, 18, and 23, or their respective dependent claims.

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Application 10/696,757

DECISION

We reverse the Examiner's decision to reject 10, 13-16, 18, 22, 23,
and 37-41.

REVERSED

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